REMARKS

Claims 30 to 50 are pending in the application.

Rejection under 35 U.S.C. 102/103

Claims 30, 35-39m 43-46 und 49 stand rejected under 35 U.S.C. 102(b) as being anticipated by *Fordyce (US 553,305)*.

Claims 31-34, 40-42, 48, 50 stand rejected 35 U.S.C. 103(a) as being unpatentable over *Fordyce (US 553,305)*.

Claim 47 stands rejected 35 U.S.C. 103(a) as being unpatentable over *Fordyce (US 553,305)* and *Duke (US 5,251,414)*.

Claim 30 has been amended to specify that there are at least three mesh layers in the arrangement, where the slurry infiltration takes place in the direction of decreasing mesh size so that the aggregate is positioned with decreasing aggregate size in accordance with the performance properties within the three-dimensional mesh arrangement. Such a method is not anticipated by or obvious in view of *Fordyce*.

Even though *Fordyce* shows a three layer arrangement in Fig. 10, which corresponds to the wall arrangement discussed in connection with Figs. 1 and 2, an infiltration in the direction of the decreasing mesh size ist not disclosed in connection with this arrangement.

The ribs of the corrugations of the wire fabric B are vertical (lines 89-90 of page 1; see section view Fig. 2) and the plane wire fabrics b, b are positioned vertically between the uprights A_2. The filling of plaster into the thus prepared wall section is carried out from the upper end of the skeleton (see lines 91-97) so that the plaster is poured in a direction parallel to the surface of the wire fabrics B, b. An infiltration in the direction of decreasing mesh size would have to be performed in a horizontal direction perpendicular to the wall surface, and that would be impossible.

The arrangement of *Fordyce* according to Figs. 6 and 7 shows only two mesh layers B and b, and the plaster filling is put in from above so that the plaster passes readily through the coarse mesh of layer B and only a small portion passes through the layer b and is used to form the surface coat of the ceiling. As can bee seen in the drawings Figs.

6 and 7 and as described on page 1, lines 79-81, the corrugations of the mesh layer B have a depth that is only a little less than the thickness of the solid part of the wall to be formed. When looking at Fig. 7, the thickness of the ceiling part formed by the corrugations/mesh layer B is more than 90 % of the thickness of the ceiling.

The sentences beginning on page 1, line 100, and ending on page 2, line2, of *Fordyce* set forth that the corrugated portion of the skeleton has meshes that are much coarser than those of the sides b because the coarse meshes have the object to facilitate spreading of the plaster and uniform settling of the plaster. Moreover, the prior art discloses that the skeleton (parts b, B) serves to strongly bond and tie the mass (plaster); see page 2, lines 10-16. The corrugated portion therefore does not retain any plaster components but is merely a structural support that has coarse meshes in order to allow uniform spreading and settling of the plaster.

The wall or ceiling formed with a skeleton of the prior art therefore has a uniform distribution of plaster throughout more than 90 % of the width of the wall or height of the ceiling and the thin plaster coat passing through the wire fabric b only serves as a finish coat. The skeleton of the prior art therefore cannot provide an aggregate distribution according to size in accordance with a mesh arrangement of at least three layers which mesh arrangement is preselected based on desired performance properties of the concrete member where a mesh width of the mesh arrangement of the three-dimensional mat system decreases at least in a direction perpendicular to a face of the at least three mesh layers. The prior art also does not disclose that the first aggregate is positioned according to decreasing aggregate size at preselected locations within the three-dimensional mat system in the infiltration direction in accordance with the desired performance properties.

The prior art does not disclose or suggest aggregate distribution across a cross-section of the concrete member that is made possible by the arrangement of mesh layers of decreasing mesh width. The prior art teaches that the plaster material used for filling the skeleton is to be distributed and spread uniformly within the corrugated wire fabric B; for this purpose the coarse mesh is provided; only the side pieces b allow a small quantity of the plaster to pass through so that an outer coat is provided in a single pouring step. The skeleton is provided, as stated in the prior art reference, simply as a structural support for

bonding the plaster and not as a means for distributing the aggregate based on decreasing aggregate size in accordance with desired performance properties.

The present invention teaches positioning of the aggregate according to size across the cross-section of the concrete member by means of the three-dimensional mat system comprised of mesh layers having decreasing mesh widths so that the individual mesh layers of the mat system act as a template to precisely place the aggregate according to size in the three-dimensional mat structure and to thereby create the desired performance characteristics of the concrete member.

In view of the teachings of the prior art it would not be obvious to use a third mesh layer. Not even the second mesh layer (coarse wire fabric B) provides positioning according to size since the coarse meshes allow the plaster material to be uniformly distributed. A third layer b as it is taught in Fig. 10 allows filling of plaster only into the space between the wire fabrics b as in the case for producing an upright wall. A third layer b placed on top of the ceiling skeleton of Figs. 6 and 7 would prevent plaster from being filled in.

There is no teaching in regard to providing a third layer that has a larger mesh than the ones underneath so that a non-uniform aggregate distribution across the cross-section of the plaster member caused by decreasing mesh sizes in the infiltration direction is provided in order to obtain desired performance properties of the concrete member. Instead, it is only taught to provide by means of the coarse mesh a uniform spreading and settling of the plaster, i.e., the mesh size is so large that all components of the plaster being filled in can pass through the meshes; the only purpose of the corrugated wire fabric is structural reinforcement. The use of at least three mesh layers for positioning in accordance with desired performance properties is not suggested in any way and is not an obvious design choice.

Claim 30 and its dependent claims are therefore believed to be allowable.

CONCLUSION

In view of the foregoing, it is submitted that this application is now in condition for allowance and such allowance is respectfully solicited.

Should the Examiner have any further objections or suggestions, the undersigned

would appreciate a phone call or e-mail from the examiner to discuss appropriate amendments to place the application into condition for allowance.

Authorization is herewith given to charge any fees or any shortages in any fees required during prosecution of this application and not paid by other means to Patent and Trademark Office deposit account 50-1199.

Respectfully submitted on September 8, 2004,

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